of 1865. All factories and mills in the western part of the city were compelled to suspend work. Farm property suffered great damage; hay, cattle, and fences were carried away and growing crops washed out or buried in the sediment left by the water. It is estimated that the loss to planters occupying the bottom lands between here and New Savannah will exceed $50,000.

Charleston, South Carolina: on the 20th and 21st destructive freshets occurred in all the streams in the northern and northeastern parts of the state. The Pedee River was very high, overflowing and completely destroying crops in the lowlands. Considerable damage was also done to railroads and crops in the northern and western parts of the state.

Abingdon, Washington county, Virginia: a very heavy fall of rain, which is described as a "water-spout," occurred here on the 27th. Farm property was injured and one person drowned.

HIGH TIDES.

Cape Henry, Virginia, 1st.
Smithville, North Carolina, 29th, 30th.
Cedar Keys, Florida, 6th.

LOW TIDES.

Albany, New York, 27th: as a result of ebb tide in the river the water was quite low and a number of vessels were grounded.

Low tides were also reported from—
Indianola, Texas, 1st, 2d, 3d, 6th, 16th, 20th, 27th, 28th.

VERIFICATIONS.

INDICATIONS.

The detailed comparison of the tri-daily indications for May, 1886, with the telegraphic reports for the succeeding thirty-two hours, shows the general average percentage of verifications to be 75.85 per cent. The percentages for the four elements are: Weather, 78.21; wind, 76.56; temperature, 72.27; barometer, 75.53 per cent. The percentages for the several states are: Maine, 72.51; New Hampshire, 74.57; Vermont, 73.97; Massachusetts, 74.74; Rhode Island, 70.43; Connecticut, 69.66; New York, 74.65; Pennsylvania, 72.95; New Jersey, 77.81; Delaware, 77.26; Maryland, 76.84; Virginia, 78.08; North Carolina, 79.64; South Carolina, 85.09; Georgia, 85.23; Florida, 80.98; Alabama, 84.73; Mississippi, 84.50; Louisiana, 86.78; Texas, 84.42; Tennessee, 74.19; Kentucky, 77.69; Ohio, 74.00; West Virginia, 69.02; Indiana, 77.32; Illinois, 74.82; Michigan, 73.30; Wisconsin, 70.14; Minnesota, 67.03; Iowa, 69.62; Nebraska, 65.16; Kansas, 68.62; Missouri, 74.01; Arkansas, 79.48; Colorado, 84.44; East Dakota, 65.15. There were twenty-one omissions to predict, out of 9,764, or 0.22 per cent. Of the 9,743 predictions that have been made, seven hundred and fifty-six, or 7.76 per cent., are considered to have entirely failed; five hundred and forty-eight, or 5.62 per cent., were one-fourth verified; 1,730, or 17.76 per cent., were one-half verified; 1,283, or 13.17 per cent., were three-fourths verified; 5,426, or 55.69 per cent., were fully verified, so far as can be ascertained from the tri-daily reports.

CAUTIONARY SIGNALS.

During May, 1886, there were fifty-two signals of various kinds displayed, of which number, twenty-four, or 46.15 per cent., were fully justified both as to the direction and velocities of the winds. Of the signals above mentioned twelve were ordered for northwesterly winds; of these, eight, or 66.67 per cent. were justified both as to direction and velocity, and nine, or 75.0 per cent., were justified as to velocity only. Seven signals were ordered for southwesterly winds, and two, or 28.57 per cent., were justified. Nine signals were ordered for northeasterly winds, and eight, or 88.88 per cent., were justified. Of fifteen cautionary signals ordered, without specifying the direction, none were justified. Nine "on-shore" signals were ordered at lake stations, and six, or 66.67 per cent., were justified.

In fifty-four cases winds occurred which would have justified the display of signals.

COLD-WAVE SIGNALS.

No cold-wave signals were ordered during May.

RAILWAY WEATHER SIGNALS.

Prof. P. H. Mell, jr., director of the "Alabama Weather Service," in the report for May, 1886, states:

The verifications of predictions for the whole area was 94 per cent. for temperature, and 90 per cent. for weather.

The following corporations comprise this system: South and North; Montgomery and Mobile; Mobile and Girard; Georgia Pacific; East Tennessee, Virginia and Georgia system in Alabama; Memphis and Charleston; Columbus Western; Atlanta and West Point of Georgia; Northeastern of Georgia; Western and Atlantic; East Tennessee, Virginia and Georgia system in Georgia; Montgomery and Eufaula; Pensacola and Selma; Pensacola and Atlantic; and the cities of Milledgeville, Georgia, and Talladega, Alabama.

Prof. Winslow Upton, director of the "New England Meteorological Society," in the report for May, 1886, states:

The verification of weather signals at New Haven was 71 per cent. for temperature, 83.9 for weather; at eighteen other stations reporting to the Secretary, 88.5 for temperature, 79.5 for weather. Local predictions made at Blue Hill gave 63 per cent. for rains, 81 for weather.

J. D. Plunkett, M. D., president of the "Tennessee State Board of Health," in the report for May, 1886, makes the percentage of verifications for temperature in the state 89.5, and weather, 84.4.

ATMOSPHERIC ELECTRICITY.

AURORAS.

The brilliant auroral display of the 8–9th was extensively observed, it having been reported from stations on the north Pacific coast, in the northern plateau, northern slope, and from various stations in that part of the country from 100° W. eastward to the Atlantic ocean, and lying north of the thirty-eighth parallel. This aurora was observed as far south as Statesville, North Carolina, and by a vessel on the Atlantic in N. 40° 24′, W. 60° 40′.

Displays were reported during the month as follows:

Mackinaw City, Michigan: an auroral arch of 15° altitude and 80° azimuth, with an occasional streamer, was observed during the night of the 1st and 2d. A faint auroral light of 15° altitude and 45° azimuth, was also seen on the 20th, beginning at 10.30 p. m. and continuing until after midnight.

Tatoosh Island, Washington Territory: on the 3d an aurora was observed at 8 p. m., consisting of a diffuse white light extending from 3° east of, to 24° west of north.

Yankton, Dakota: an aurora was visible from 10.00 to 11.50 p. m. of the 8th, consisting of an arch of white light with streamers reaching, at times, within 30° of the zenith.

Valentine, Nebraska: an auroral arch was visible from 9.30 p. m. of the 8th until after midnight of the 9th. The centre of the aurora was about 15° east of north and extended over 30° of azimuth. At 10.20 p. m. streamers extending almost to the zenith were observed; at times they extended several degrees below the arch. The maximum brilliancy occurred at 10.30 p. m.

Saint Vincent, Minnesota: on the 8th at 9.50 p. m., a remarkably brilliant auroral display began. When first observed it consisted of a single streamer having a width varying from 4° to 8°, which spanned the sky from east to west, at the same time having a preceptible movement toward the west. At 10 p. m. the aurora had changed in shape, and appeared as a perfect corona; later it appeared as a diffuse, whitish light in the west, while in the east it presented a deep orange tint and had a very active undulatory motion, constantly changing in form. At 10.20 p. m. a beautiful and well defined "auroral curtain" was formed in the east, which appeared as though hung in loops or folds, owing to the peculiar arrangement of the beams; this formation lasted about five minutes. At 11.40 p. m. it appeared in the form of numerous broad streams of white light moving rapidly toward the zenith. At 12.40 a. m. of the 9th, a dark bank was observed on the northern horizon and the light above it was more brilliant, while in the east the aurora had almost disappeared. The phenomenon continued until 2.10 a. m. The Signal Service observer at this station